

Title (en)
LIQUID CRYSTAL DISPLAY DEVICE

Title (de)
FLÜSSIGKRISTALLANZEIGEEINRICHTUNG

Title (fr)
DISPOSITIF D'AFFICHAGE À CRISTAUX LIQUIDES

Publication
EP 2105785 A1 20090930 (EN)

Application
EP 07832962 A 20071203

Priority
• JP 2007073342 W 20071203
• JP 2006328600 A 20061205

Abstract (en)
In the liquid crystal display device of the present invention, each pixel region includes first, second and third subpixel electrodes 111a , 111b1 and 111b2 , a vertical alignment liquid crystal layer, a counter electrode 121, and an alignment film. The second and third subpixel electrodes are arranged to interpose the first subpixel electrode. Each pixel region is comprised of first, second and third regions associated with the first, second and third subpixel electrodes, respectively. Each pixel region includes eight liquid crystal domains in total, consisting of two sets of four liquid crystal domains A, B, C and D of first, second, third and fourth types, in which an angle formed between any two tilt directions is approximately equal to an integral multiple of 90 degrees. The first region has four liquid crystal domains of the first, second, third and fourth types, respectively, while each of the second and third regions has two liquid crystal domains selected from the four other liquid crystal domains of the first, second, third and fourth types, whereby the display quality of a VA mode LCD is improved.

IPC 8 full level
G02F 1/1337 (2006.01); **G02F 1/1343** (2006.01); **G02F 1/1362** (2006.01); **G02F 1/137** (2006.01)

CPC (source: EP US)
G02F 1/133753 (2013.01 - EP US); **G02F 1/133742** (2021.01 - EP US); **G02F 1/133761** (2021.01 - EP US); **G02F 1/134345** (2021.01 - EP US); **G02F 1/136209** (2013.01 - EP US); **G02F 1/13712** (2021.01 - EP US)

Cited by
US9753336B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 2105785 A1 20090930; **EP 2105785 A4 20100623**; CN 101568875 A 20091028; CN 101568875 B 20141008; JP 4950219 B2 20120613; JP WO2008069181 A1 20100318; US 2009279034 A1 20091112; US 8319926 B2 20121127; WO 2008069181 A1 20080612

DOCDB simple family (application)
EP 07832962 A 20071203; CN 200780045078 A 20071203; JP 2007073342 W 20071203; JP 2008548279 A 20071203; US 51762607 A 20071203